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Chapman et al.

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(54) **PROCESSING SIGNALS TO DETERMINE SPATIAL POSITIONS**

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See application file for complete search history.

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(57) **ABSTRACT**

An apparatus is disclosed for supplying input signals to a computer. A sensor having the form of a sphere has a touch sensitive surface for generating position data for touch events. The sensor includes orientation sensors that determine rotation with respect to the earth's magnetic and gravitational fields. Orientation data may be combined with position data to interpret the orientation of touch events on the surface with respect to the computer's display. Cursor movement or text may be generated from touch events. Preferably the sphere has a roughened surface that generates sound when touched. Position data is generated by processing signals from microphones under the sphere's surface.

8 Claims, 21 Drawing Sheets